



# 2SB1739 / 2SD2720 — Compact Motor Driver Applications

PNP / NPN Epitaxial Planar Silicon Transistors

## Features

- Low saturation voltage.
- Contains diode between collector and emitter.
- Contains bias resistance between base and emitter.
- Large current capacity.

## Specifications ( ) : 2SB1739

### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		(-)40	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		(-)30	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(-)6	V
Collector Current	I <sub>C</sub>		(-)3	A
Collector Current (Pulse)	I <sub>CP</sub>		(-)5	A
Collector Dissipation	P <sub>C</sub>		1	W
		T <sub>C</sub> =25°C	15	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =(-)30V, I <sub>E</sub> =0A			(-)1.0	μA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)0.5A	70			
	h <sub>FE2</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)2A	50			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)0.5A		100		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		(55)40		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)100mA		(-0.28)0.23	(-0.6)0.5	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)100mA			(-)1.5	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =(-)10μA, I <sub>E</sub> =0A	(-)40			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO1</sub>	I <sub>C</sub> =(-)10μA, R <sub>BE</sub> =∞	(-)40			V
	V <sub>(BR)CEO2</sub>	I <sub>C</sub> =(-)10mA, R <sub>BE</sub> =∞	(-)30			V
Diode Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =(-)0.5A			(-)1.5	V
Base-to-Emitter Resistance	R <sub>BE</sub>			0.8		kΩ

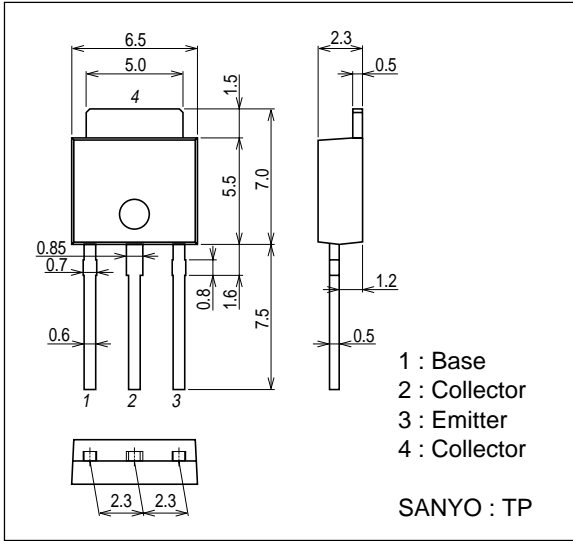
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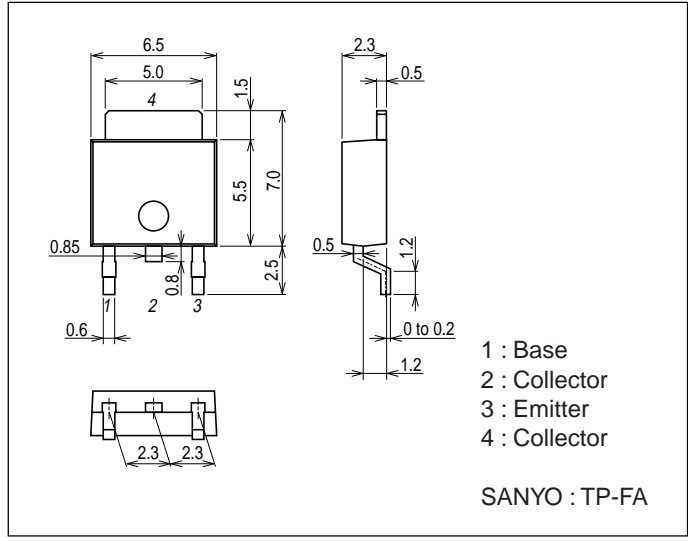
## Package Dimensions

unit : mm (typ)  
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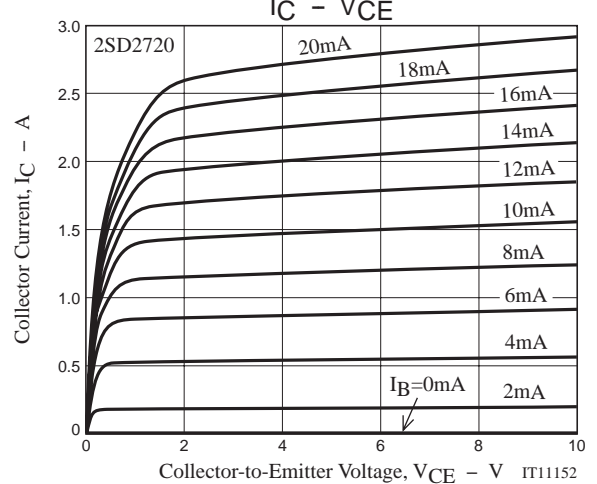
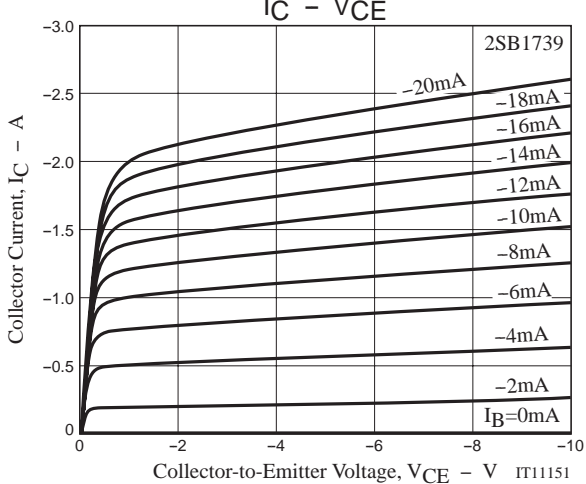
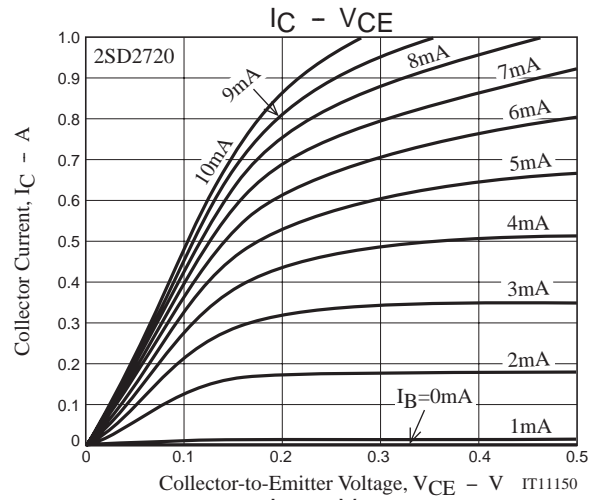
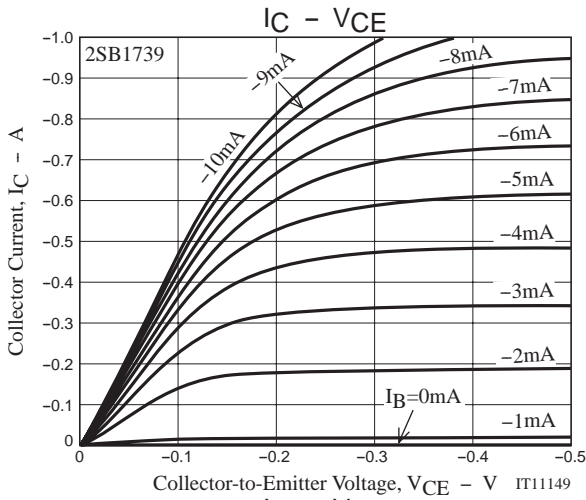
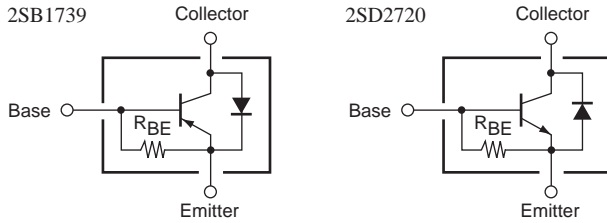


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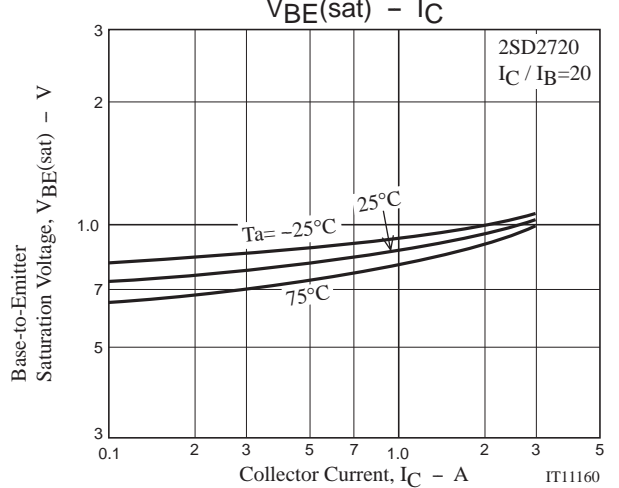
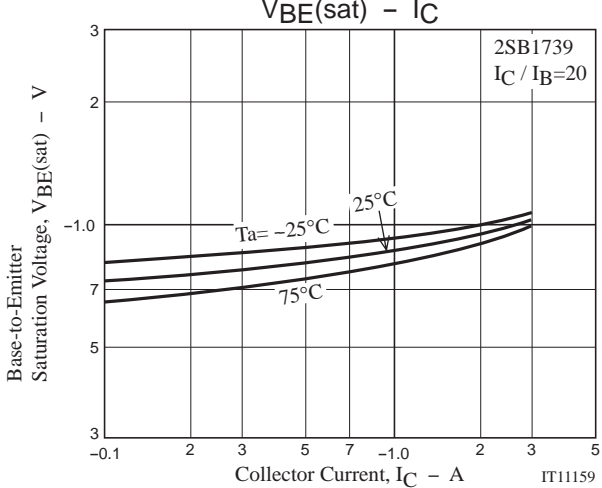
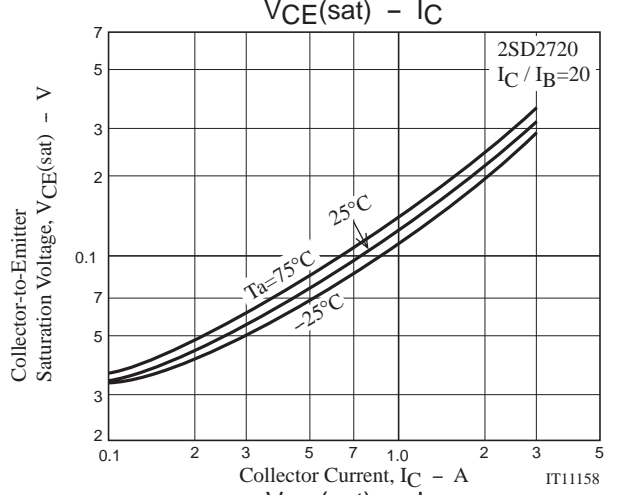
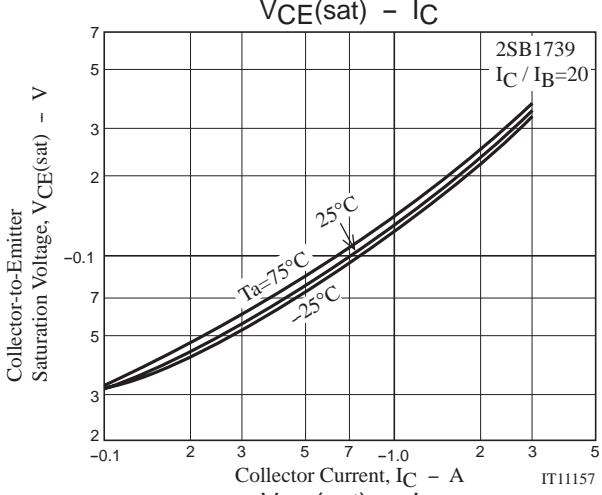
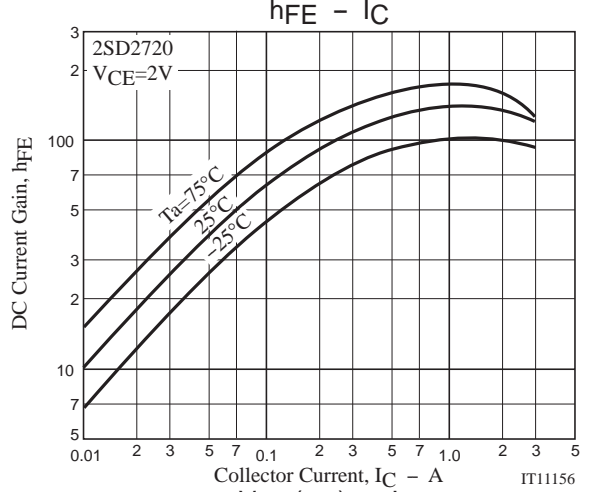
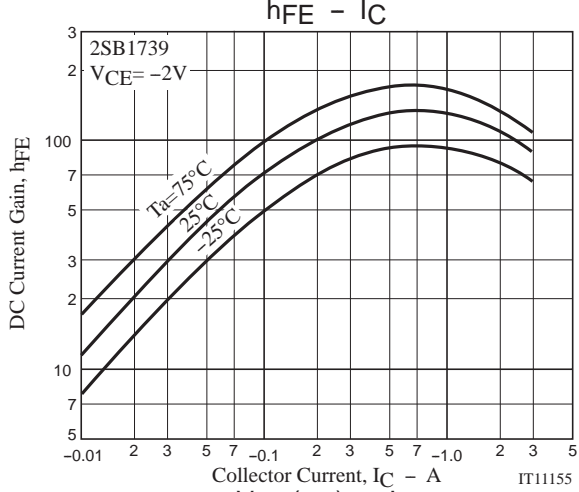
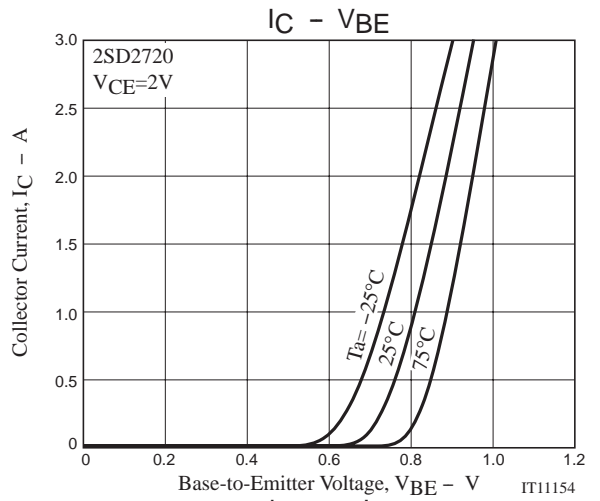
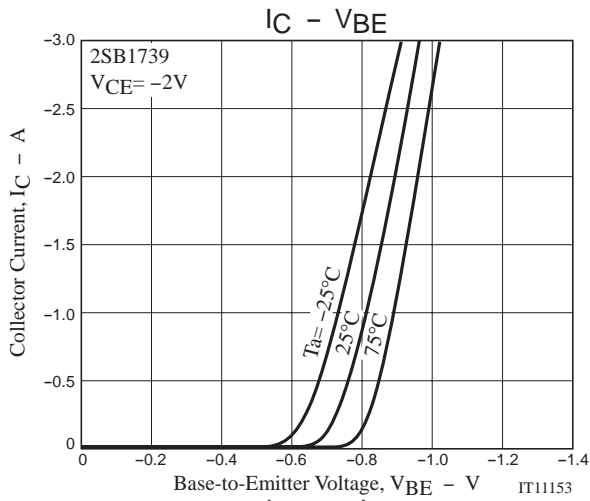
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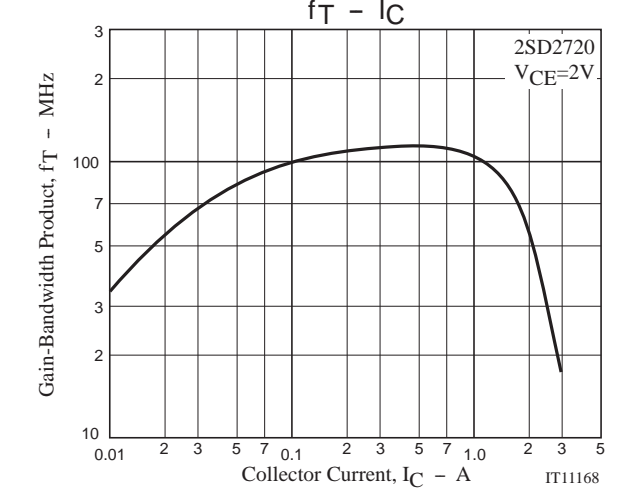
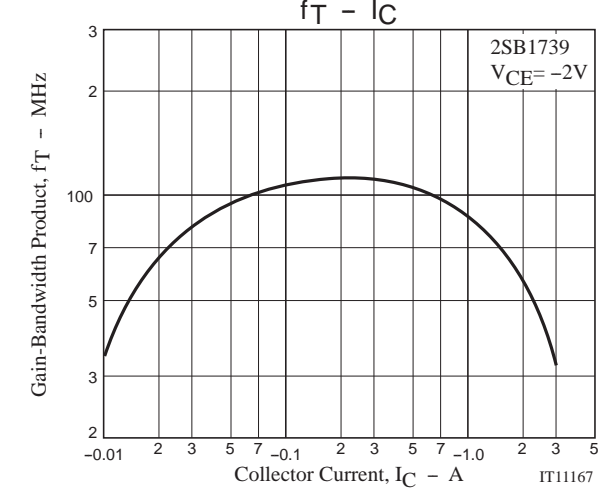
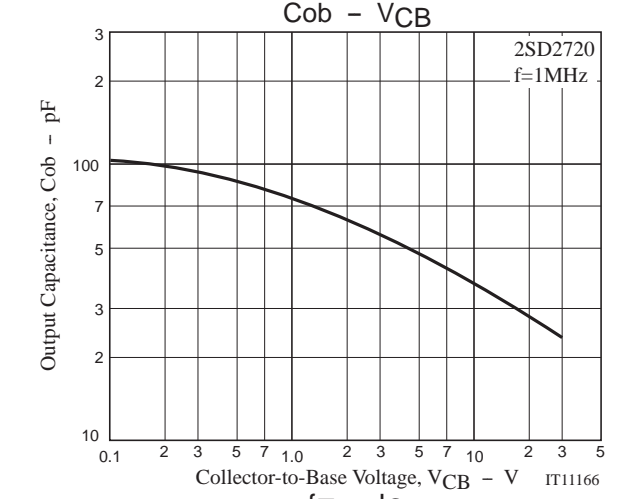
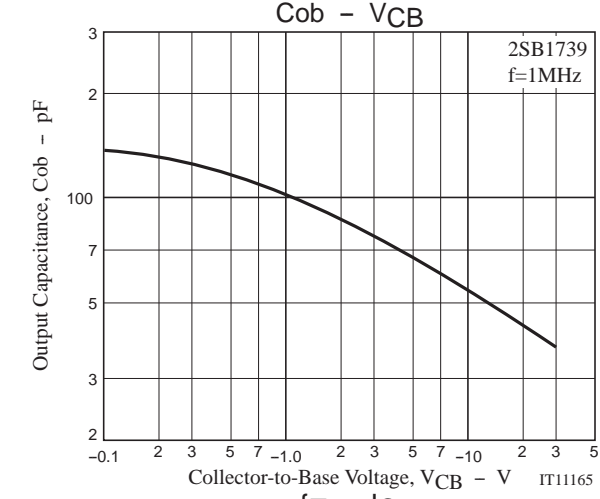
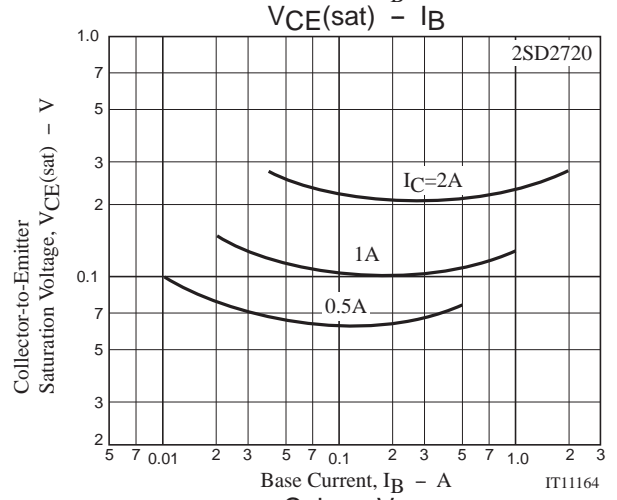
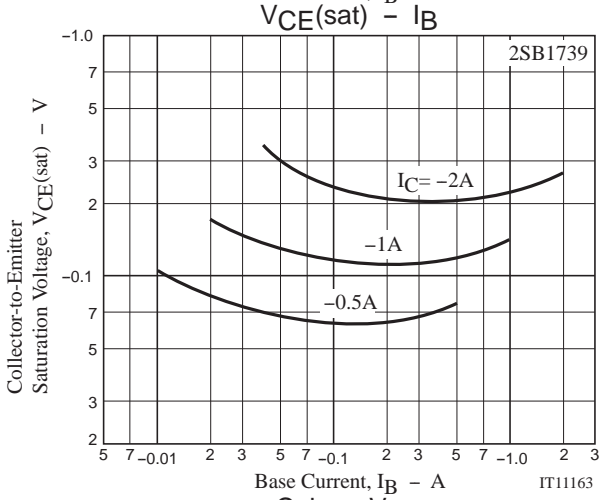
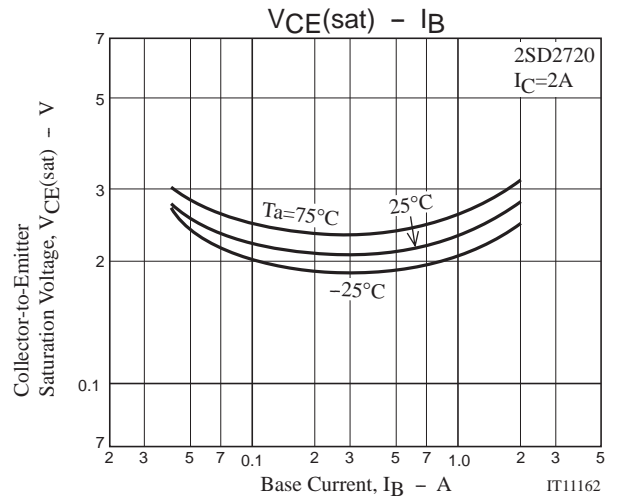
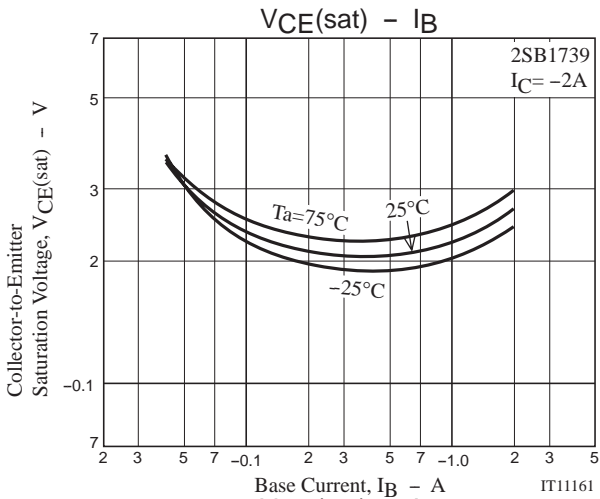
## Electrical Connection



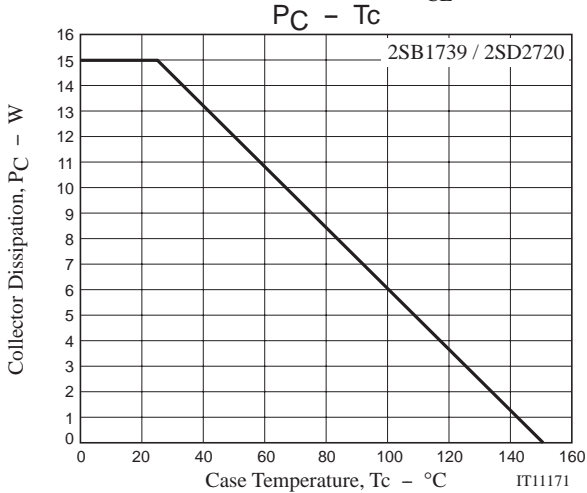
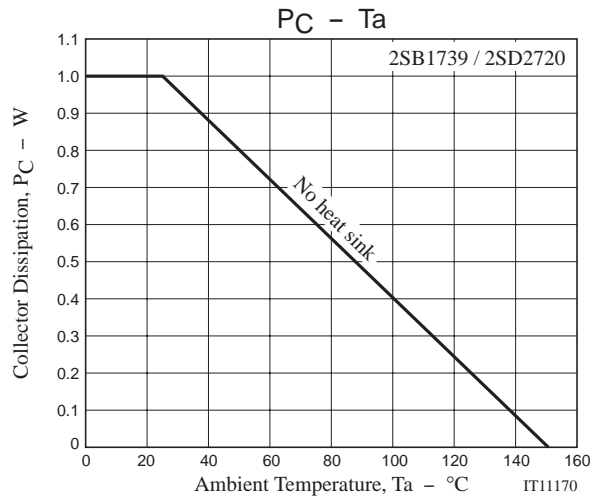
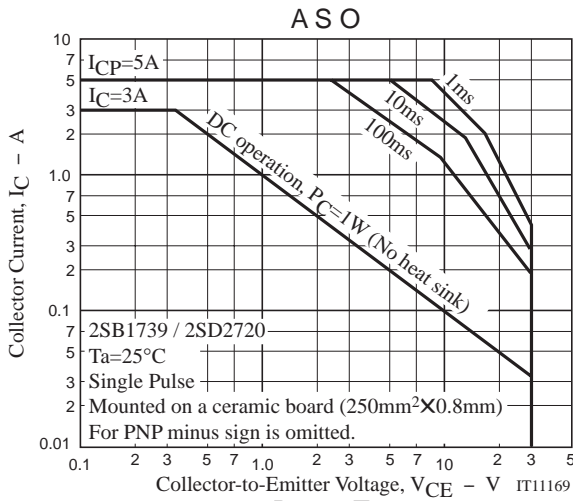
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